



INVESTOR IN PEOPLE

The Patent Office

Concept House

Cardiff Road

Newport

South Wales

NP10 8QQ

I, the undersigned, being an officer duly authorised in accordance with Section 74(1) and (4) of the Deregulation & Contracting Out Act 1994, to sign and issue certificates on behalf of the Comptroller-General, hereby certify that annexed hereto is a true copy of the documents as originally filed in connection with the patent application identified therein.

In accordance with the Patents (Companies Re-registration) Rules 1982, if a company named in this certificate and any accompanying documents has re-registered under the Companies Act 1980 with the same name as that with which it was registered immediately before re-registration save for the substitution as, or inclusion as, the last part of the name of the words "public limited company" or their equivalents in Welsh, references to the name of the company in this certificate and any accompanying documents shall be treated as references to the name with which it is so re-registered.

In accordance with the rules, the words "public limited company" may be replaced by p.l.c., plc, P.L.C. or PLC.

Re-registration under the Companies Act does not constitute a new legal entity but merely subjects the company to certain additional company law rules.

Signed

Dated 15 September 2003

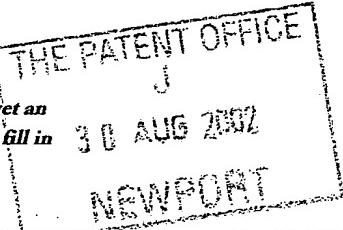




30AUG02 0744651-1 D00129
POU/7700 0.00-0220146/5

Request for grant of a patent

(See the notes on the back of this form. You can also get an explanatory leaflet from the Patent Office to help you fill in this form)



The Patent Office

 Cardiff Road
Newport
South Wales
NP10 8QQ

1. Your reference

0200310

2. Patent application number

(The Patent Office will fill in this part)

0220146.5

3. Full name, address and postcode or of each applicant (*underline all surnames*)
 SMITHS GROUP PLC
765 FINCHLEY ROAD
LONDON
NW11 8DS
Patents ADP number *(if you know it)*

8032310001

If the applicant is a corporate body, give the country/state of its incorporation

GB

4. Title of the invention

OOCYTE RECOVERY APPARATUS5. Name of your agent *(if you have one)*

J. M. FLINT

"Address for service" in the United Kingdom to which all correspondence should be sent
(including the postcode)

 765 FINCHLEY ROAD
LONDON
NW11 8DS
Patents ADP number *(if you know it)*

1063304001

6. If you are declaring priority from one or more earlier patent applications, give the country and the date of filing of the or of each of these earlier applications and *(if you know it)* the or each application number

Country

Priority application number
*(if you know it)*Date of filing
(day / month / year)

7. If this application is divided or otherwise derived from an earlier UK application, give the number and the filing date of the earlier application

Number of earlier application

Date of filing
*(day / month / year)*8. Is a statement of inventorship and of right to grant of a patent required in support of this request? *(Answer 'Yes' if:*

YES

- a) *any applicant named in part 3 is not an inventor, or*
 - b) *there is an inventor who is not named as an applicant, or*
 - c) *any named applicant is a corporate body.*
- See note (d))*

Patents Form 1/77

9. Enter the number of sheets for any of the following items you are filing with this form.
Do not count copies of the same document

Continuation sheets of this form

Description 4

Claim(s)

Abstract

Drawing(s) 2

10. If you are also filing any of the following, state how many against each item.

Priority documents

Translations of priority documents

Statement of inventorship and right to grant of a patent (*Patents Form 7/77*)

Request for preliminary examination and search (*Patents Form 9/77*)

Request for substantive examination
(*Patents Form 10/77*)

Any other documents
(please specify)

11.

I/We request the grant of a patent on the basis of this application.

Signature

Date 29 Aug 2002

12. Name and daytime telephone number of person to contact in the United Kingdom

J. M. FLINT 020 8457 8220

Warning

After an application for a patent has been filed, the Comptroller of the Patent Office will consider whether publication or communication of the invention should be prohibited or restricted under Section 22 of the Patents Act 1977. You will be informed if it is necessary to prohibit or restrict your invention in this way. Furthermore, if you live in the United Kingdom, Section 23 of the Patents Act 1977 stops you from applying for a patent abroad without first getting written permission from the Patent Office unless an application has been filed at least 6 weeks beforehand in the United Kingdom for a patent for the same invention and either no direction prohibiting publication or communication has been given, or any such direction has been revoked.

Notes

- a) If you need help to fill in this form or you have any questions, please contact the Patent Office on 08459 500505.
- b) Write your answers in capital letters using black ink or you may type them.
- c) If there is not enough space for all the relevant details on any part of this form, please continue on a separate sheet of paper and write "see continuation sheet" in the relevant part(s). Any continuation sheet should be attached to this form.
- d) If you have answered 'Yes' Patents Form 7/77 will need to be filed.
- e) Once you have filled in the form you must remember to sign and date it.
- f) For details of the fee and ways to pay please contact the Patent Office.

OOCYTE RECOVERY APPARATUS

This invention relates to oocyte recovery apparatus.

Conventionally, an oocyte is extracted from a follicle using a needle to which suction is applied so that the oocyte is aspirated into a test tube or other receptacle. Often a flushing liquid is supplied along a secondary lumen of the needle to assist removal. Once the oocyte has been extracted, it is transferred to a suitable receptacle

One problem with the apparatus used in this technique is that the temperature of the liquid used to help flush out the oocytes from the patient can fall below the ideal level, especially if the procedure is delayed. Also, the temperature of the oocyte can fall appreciably during its passage along the needle, its associated tubing and into the test tube.

It is an object of the present invention to provide alternative oocyte recovery apparatus

According to one aspect of the present invention there is provided oocyte recovery apparatus including a syringe, tubing connected with the nose of the syringe and an elongate jacket extending along the outside of the syringe and tubing, the jacket being adapted to maintain the temperature within the syringe and tubing.

The syringe preferably contains a flushing liquid. The apparatus preferably also includes an aspiration tube along which the oocyte passes and a second elongate jacket

extending along the aspiration tube. The jacket may be of a thermally-insulating construction and, or alternatively, it may include heating means.

According to another aspect of the present invention there is provided a jacket for apparatus according to the above one aspect of the invention.

Apparatus according to the present invention will now be described, by way of example, with reference to the accompanying drawings, in which:

Figure 1 is a view of the apparatus;

Figure 2 is a partly cut-away perspective view of a syringe for flushing liquid; and

Figure 3 is a partly cut-away view of a part of a modified form of the apparatus

With reference first to Figure 1 the apparatus includes a conventional dual-lumen oocyte recovery needle 1 having a forward, patient end tip 2 and a rear end hub 3. The two lumens within the needle are respectively for supply of flushing liquid and for passage in the opposite direction of aspirated materials including oocytes and follicle fluid. The flushing and aspiration lumens in the needle connect with respective ports 4 and 5 on the hub 3. Attached with the flush and suction ports 4 and 5 are respective tubes 6 and 7. The flushing tube 6 is terminated by a connector 8. The aspiration tube 7 extends through a bung 9 fitted into the

neck of a test tube 40. A second tube 41 extends through the bung 9 into the test tube 40 at one end and is connected at its other end with a vacuum pump 42.

The apparatus further includes a syringe 11 connected to the flushing tube 6 and containing a suitable flushing fluid warmed to body temperature of about 37°C.

The apparatus is completed by two thermally insulating jackets 20 and 30 made of a thermally-insulating, flexible material such as a foamed plastics. The jacket 20 has a relatively narrow portion 21 along the major part of its length, which encloses the entire length of the tube 6 as a loose fit and has an enlarged rear end 22 enclosing the barrel of the syringe 11 as a close sliding fit. The other jacket 30 extends along the aspiration tube 7 from the hub 3 to the bung 9. The jacket 30 terminates at the bung 9 although, in an alternative arrangement shown in Figure 3 it could have an enlarged portion 31 at its rear end that fits over the bung 9 and test tube 40.

In operation, the syringe 11 is filled with a flushing liquid that has previously been warmed to body temperature. The nose of this syringe 11 is fitted onto the connector 8 at the end of the flush tube 6 and the enlarged region 22 of the jacket 20 is slid rearwardly to cover the barrel of the syringe. The needle 1 is then used in the usual way to remove oocytes from the patient, turning on the vacuum pump 42 to suck oocytes into the test tube 40, which would normally be in a warmed holder.

The insulating jackets of the present invention help maintain the temperature of the flushing liquid before use and of the oocyte after removal from the patient. The insulating jackets are low cost so they can be disposed of after a single use.

Although the insulating jackets described above are removable from the syringe and tubes and can be used with conventional oocyte recovery sets, they could, instead, be fixed with the syringe or tube. The jackets could be moulded about the apparatus.

The jackets described above maintain the temperature of the syringe and tubes by being thermally insulating. They could, however, maintain the temperature in other ways. For example, the jackets could contain a volume of a previously heated substance such as a wax or gel that maintains the desired temperature by changing from a liquid to a solid at around body temperature. Alternatively, the jackets could include an electrical heating element, which could be powered by an internal battery or a remote power source.

112

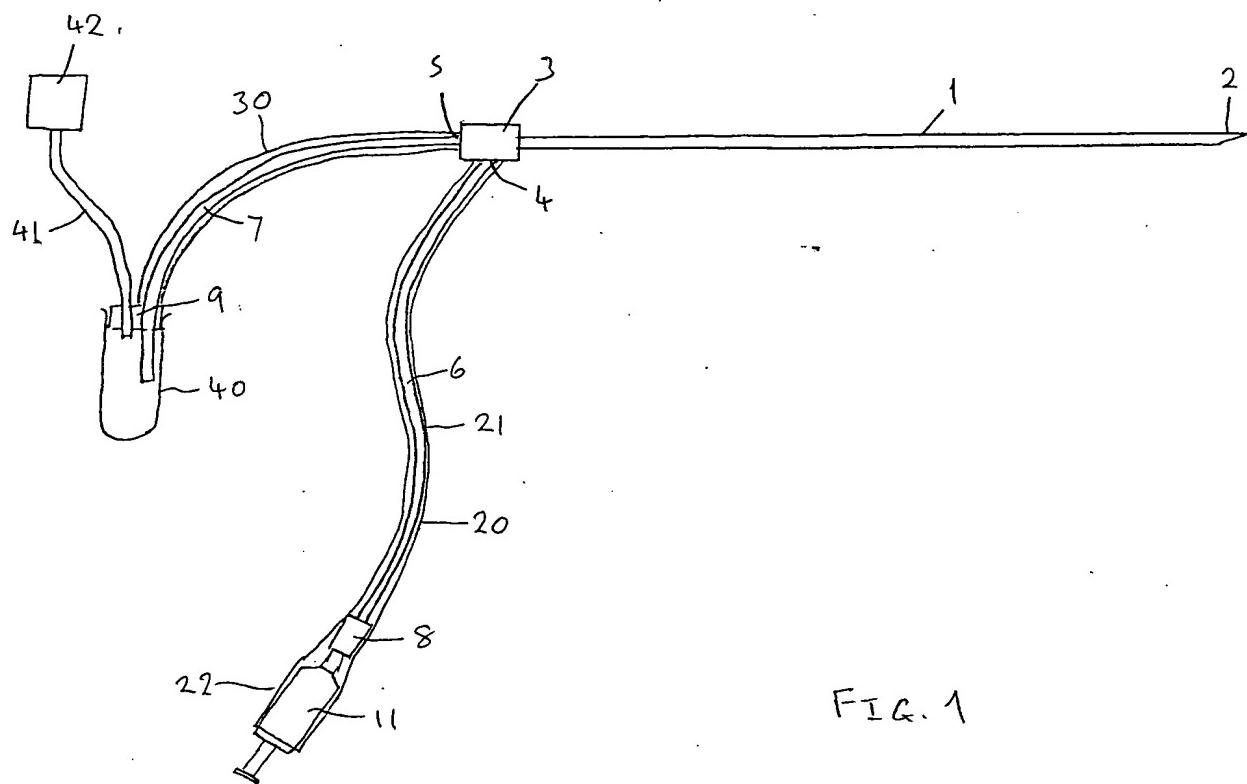


FIG. 1

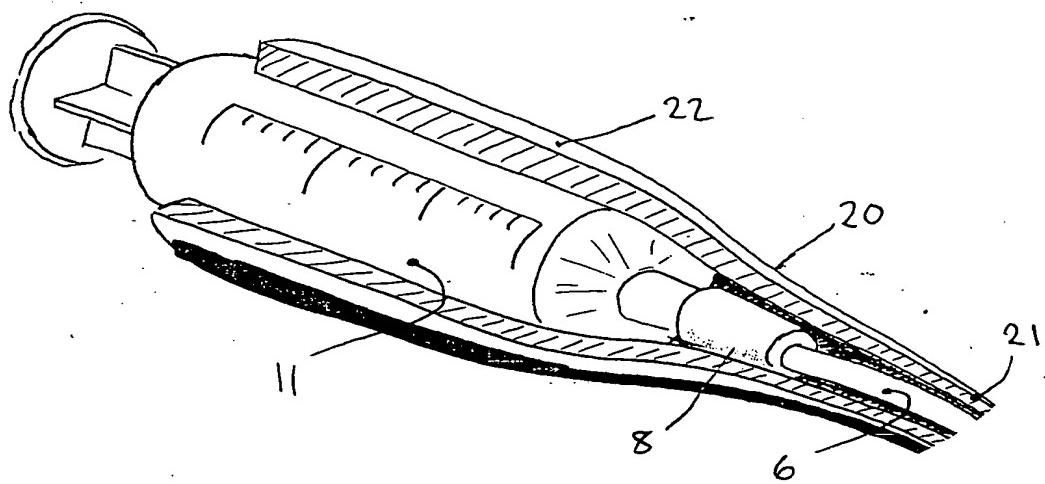
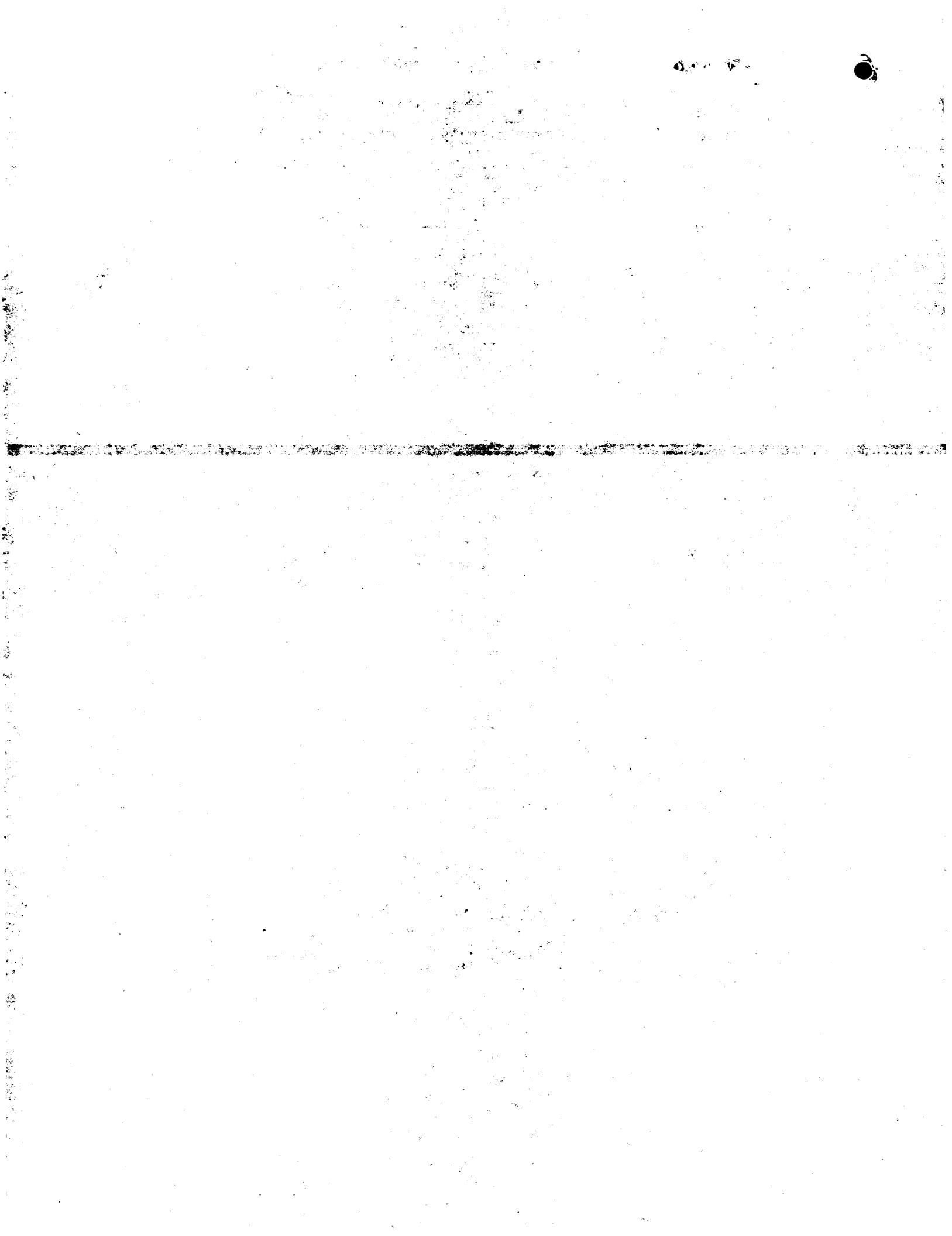


FIG. 2



2/2

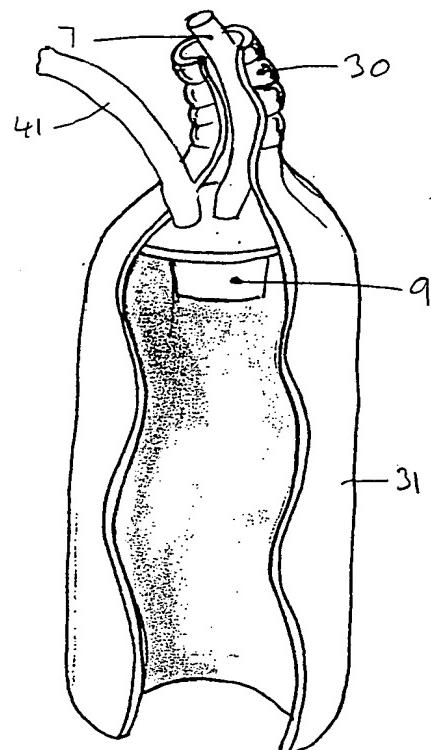


FIG. 3

